




March 1, 2006

Dave Peeler, Manager 
Water Quality Program
Washington Dept. of Ecology
P O. Box 47600
Olympia, WA 98504-7600

Department of Ecology
Water Quality Program
MAR 06 2006

Re: Spokane River TMDL

Dear Dave,

Thank you for meeting with Commissioner Tom Agnew and myself last week. We appreciate you taking the time to listen to the District's concerns regarding the proposed TMDL for phosphorus in the Spokane River.

As you know, the District is about to complete the upgrade to its wastewater treatment plant which discharges to the Spokane River. The project when completed in May 2006 will improve phosphorus and ammonia removal, thereby improving the effluent to the river. The \$12 million dollar cost of the project is financed partially by Public Works Trust Fund loan of \$7 million and cash reserves of the District of \$5 million. Needless to say, this is a large expense for a small community.

The District is proud of its long history of environmental stewardship including lake, river and aquifer protection activities. The District was one of the first to propose bans on phosphorus containing laundry detergent, phosphorus containing dishwasher detergent and phosphorus free fertilizers. Water conservation has been a long time public education program of the District realizing that the Spokane Rathdrum Prairie Aquifer is a limited resource of drinking water for the people of North Idaho and Spokane metropolitan area. I mention this, because the District is committed to being a partner with the other dischargers in the water quality improvements of the Spokane River.

Meeting the proposed Spokane River phosphorus standard could have a significant financial impact on the 2300 District customers that will pay for the treatment plant improvements at Liberty Lake. The District's ability to finance future construction is a concern, particularly for the immediate future. Installing "purple pipe" for water reuse is still another unknown cost. We have just spent \$12 million on the treatment plant upgrade. It is estimated that adding filtration to the District's treatment plant could cost an additional \$6 million dollars. Liberty Lake Sewer and Water District will need financial help to meet these obligations and hopefully the Washington State Department of Ecology will assist. In addition, the District's NPDES permit is currently at 1 mgd,

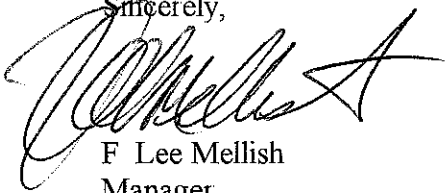
plant has been designed and constructed for 2 mgd. The District could reach the 1 mgd limit before the next phase of improvements is completed. The new NPDES permit will need to permit discharges to the river in excess of 1 mgd.

Enclosed are the written responses by the District's consulting engineers on the Department of Ecology's Water Quality Managed Implementation Plan Proposal as dated January 2006. Also included for your review are August 2005 and January 2006 Discharge Monitoring Reports for the District's wastewater treatment plant. Please note that in mid January 2006, the new addition to the treatment plant was placed on-line and resulted in immediate reduction of phosphorus in the effluent. We are encouraged by these preliminary results.

Thank you again for meeting with us.

Please contact me at (509) 922-9016 for additional information.

Sincerely,

A handwritten signature in black ink, appearing to read 'F. Lee Mellish', is written over the typed name.

F. Lee Mellish
Manager

Cc: Dennis Fuller
Larry Esvelt
LLSWD Commissioners

enclosures



ESVELT ENVIRONMENTAL ENGINEERING
7605 EAST HODIN DRIVE, SPOKANE, WA 99212-1816

Phone: 509-926-3049
Fax: 509-922-3073

February 14, 2006

MEMO RE: Spokane River DO TMDL Draft Managed Implementation Plan

TO: Dennis Fuller PE, Century West Engineering Corp
Copy: Dr. Lee Mellish, Manager, Liberty Lake Sewer & Water District

From: Larry A. Esvelt PhD PE

Department of Ecology
Water Quality Program
MAR 06 2006

Water Quality Managed Implementation Plan Proposal¹

The Draft TMDL MIP contains numerous proposals for implementation to improve water quality in the Spokane River and Lake Spokane (Long Lake Dam Reservoir). They include:

- 1 A goal of P discharge from Liberty Lake Sewer and Water District of 0.03 #/D (p. 2). This calculates as 0.0018 mg/l (1.8 µg/l) of P in an effluent of 2.0 MGD, the projected planning period wastewater flow. *This may be a typographical error, as no discussions to date have mentioned achievement of treatment to this low level.*
- 2 An Interim Limit of 50 µg/l of total P in the effluent is proposed for all dischargers (p. 5).
- 3 Reclamation and reuse is suggested as a tool for reducing P mass emission rate (MER) to the river (p. 5). Reuse in any current water supply vendor service area requires inclusion of the reuse alternative in the Comprehensive Water Plan, and facilities that reclaim water must not impair any water rights downstream.
- 4 Reuse/infiltration recharge is suggested as a means for reducing P MER to the river (p. 8). Presumably this refers to recharge of the Spokane-Rathdrum Aquifer. The Aquifer management plan does not currently accommodate recharge of wastewater, regardless of pretreatment.
- 5 A "Technology" schedule has been included, indicating completion of various components as follows:
 - a completion of pilot studies - 6 months;
 - b completion of a Comprehensive Wastewater Management Plan - 6 months;
 - c completion of design for the improvements - 12 months;
 - d completion of construction - 24 months.

¹ Washington State Department of Ecology, Spokane River Water Quality Management Implementation Plan Proposal, January 2006.

- 6 A Permitting schedule is proposed. It is difficult to ascertain how this will be administered from the presentation in the MIP, since time limits in the Technology schedule may be difficult to achieve (see below).
- 7 The issue of increased quantity and changed characteristics of biosolids was not addressed in the MIP.

Comments

1. The initial "goal" was presumably a typographical error. Based on 10 µg/l, as discussed in the text, the limit would have been 0.17 #/D. Recent investigations have indicated that 10 µg/l is difficult to impossible to achieve on a consistent basis.

A trip was made to observe Colorado WWTPs achieving low levels of P. Data was obtained from the plants visited, which was summarized in a Technical Memorandum on Advanced P Removal in Colorado Area Wastewater Treatment Plants². The plants had design capacities in a range of sizes, but all appropriate for consideration as being appropriate to the Liberty Lake Sewer and Water District treatment facility. The influent sewage was fairly typical in conventional pollutant concentration and in P concentration. Data from the visited plants was normalized logarithmically for analysis. A summary of performance at the plants attempting to remove P to low concentrations is as follows:

Plant Location & Name	Design Flow, MGD	Current Flow, MGD	Data Year	TP, 50%ile, mg/l	TP, 95%ile, mg/l	TP, 99%ile, mg/l
Breckenridge, Iowa Hill	1.5	1.0	2003	0.007	0.026	0.045
			2004	0.005	0.017	0.027
			2005	0.008	0.019	0.028
Breckenridge, Farmers Korner	3.0	1.0	2003	0.006	0.020	0.031
			2004	0.004	0.013	0.020
			2005	0.007	0.029	0.052
Frisco, Frisco WWTP	1.7	0.8	2004	0.049	0.093	0.120
			2005	0.069	0.124	0.158
Dillon, Snake River WWTP	2.6	0.7	2003	0.015	0.035	0.049
			2004	0.018	0.038	0.053
			2005	0.014	0.034	0.049
Parker, Pinery WWTP	2.0	0.65	2002	0.029	0.060	0.082
			2003	0.027	0.050	0.065
			2004	0.029	0.054	0.071

Only two of the exemplary treatment plants achieved 10 µg/l P on a 50%ile frequency basis.

² Technical Memorandum, Advanced P Removal – Colorado Area Wastewater Treatment Plants, Esvelt Environmental Engineering, February 2006 (in Draft Form)

Pilot plant studies have been conducted at the City of Spokane Riverside Park Water Reclamation Facility during the fall and early winter 2005-2006. Five different pilot treatment units were operated from 2 to 4 weeks each. Preliminary results showed none of the units to produce 10 µg/l P effluent on a 50%ile basis. The question was raised during the pilot studies regarding reproducible results, as data from the treatment plant laboratory and from Anatek, a commercial laboratory, were not always consistent, even though both used the same EPA approved procedures.

- 2 The exemplary Colorado plants visited produced an effluent P concentration of 50 µg/l on a more consistent basis;
 - a. Four of the 5 plants produced an effluent P concentration of 50 µg/l or better on a 50%ile frequency
 - b. Three of the 5 plants produced an effluent P concentration of 50 µg/l or better on a 90%ile basis (log normalized data)
 - c. Four of the 5 plants produced an effluent P concentration of 100 µg/l or better on a 99%ile basis (log normalized data)

These results indicate that significant doses of coagulant (all used Alum) are required for low concentration effluent P. Doses ranged from 85 mg/l (Frisco, with the lowest level of achievement) to nearly 200 mg/l (Iowa Hill and Farmers Korner, with the highest level of achievement).

The pilot plant units tested at RPWRF also had better results based on a 50 µg/l objective.

- a. Four of the 5 pilot treatment units tested achieved 50 µg/l at the 90%ile level (log normalized data)
 - b. Four of the 5 pilot treatment units tested achieved 100 µg/l on a 99%ile level (log normalized data)
- 3 RCW 90 46 requires that proposed uses of reclaimed water intended to augment or replace potable water supplies or create the potential for the development of additional potable water supplies, must be incorporated into water supply plan or plans addressing potable water supply service by multiple water purveyors. The owner of a wastewater treatment facility that proposed to reclaim water shall be included as a participant in the development of such regional water supply plan or plans. This may not have been given adequate recognition in the MIP.

RCW 90 46 also requires that Facilities that reclaim water shall not impair any existing water right downstream from any freshwater discharge points of such facilities unless compensation or mitigation for such impairment is agreed to by the holder of the affected water right. This may not have been given adequate recognition in the MIP.

- 4 The Spokane Rathdrum Aquifer Management Plan (208 Plan) adopted by Spokane County, Washington Department of Ecology, and other government entities, calls for no discharge of wastewater to groundwater in the "Aquifer Sensitive Area"³
- 5 Pilot plant studies were conducted over a period of 5 months at the Spokane RPWRF. This pilot testing began after Inland Empire Paper Co. had conducted pilot testing with essentially the same units over a previous period. Arrangement for the units and conduct of the testing took place over nearly a year period. This would indicate that a 6-month schedule for completion of pilot testing might not be feasible

Completion of a Comprehensive Wastewater Management Plan in a 6-month period may also not be feasible, especially if water supply comprehensive plans and water rights mitigation issues must be completed before the environmental considerations of the wastewater plan can be completed

Completion of design of facilities in 12 months after the comprehensive wastewater plan is complete and approved may be feasible, if financing for the design is already in place. Securing financing may delay this item

Completion of construction in 24 months after design is complete would appear to be feasible, if financing is already in place. Delays in financing may delay the construction.

- 6 The permitting schedule will be adversely affected if the other potential timing problems discussed above cannot be overcome
- 7 The production of biological sludge will increase only moderately due to the higher level of nutrient removal. The significant addition of chemicals will add significantly to the quantity of sludge, and will change the character of the sludge significantly

For Example: Addition of 180 mg/l of Alum will result in about 50% of that quantity in dry solids production. This nearly doubles the sludge production from a typical treatment plant. The resulting sludge will be about ½ chemical sludge and ½ biological sludge from a plant like the LLSWD facility. If the sludges are combined, it raises serious questions regarding the ability to beneficially apply on land, and may make composting not feasible due to the loss of energy available to create and maintain composting temperatures

It does not appear that any consideration of this important factor was included in the discussion or considerations leading to the Department of Ecology proposed MIP

³ Spokane Aquifer Water Quality Management Plan, Final Report and Water Quality Management Framework Recommendations for Policies and Action to Preserve the Quality of the Spokane-Rathdrum Aquifer, Spokane County Washington '208' Program, April 1979

February 15, 2006

Liberty Lake Sewer and Water District
22510 E. Mission
Liberty Lake, WA 99019

Attn: Lee Mellish, District Manager

RE: Proposed Spokane River Water Quality Managed Implementation Plan

Dear Lee:

Century West Engineering has reviewed the proposed Spokane River Water Quality Managed Implementation Plan published by WSDOE and dated January 2006. Based on our review of this plan as it relates to and implicates the Sewer and Water District, we offer the following comments:

Page 2

The Liberty Lake allocated phosphorous daily loading goal is 0.03 lbs/day. At 2 MGD this equates to an approximate concentration of 1.8 ug/l. The plan further states that permittees will work to achieve equivalent reductions of their assigned allocation during the first ten years. There is no discussion or indication if this is a seasonal or year-round target. There is no treatment technology that currently exists that would allow the District to meet the goal at your treatment plant. As discussed later in these comments, the District has limited capacity to implement reduction measures discussed as "tool box" methods.

Page 3

The loading graph included in the plan assumes dischargers will reduce phosphorous loading from their treatment plants to 50 ug/l by 2012. This appears to reduce the point source phosphorous loadings to approximately 15 pounds per day at 2035. It is questionable that current technologies can achieve this level of phosphorous removal on a consistent basis.

Page 5

WSDOE expects that technology selection will be accomplished after rigorous pilot testing. There appears to be some flexibility in establishing the actual Phosphorous concentration limit based on the outcome of pilot test results. This may be problematic in that treatment results can sometimes be temperature and seasonally dependant. Short-term pilot tests may not provide sufficient data to give confidences in long-term reliability and consistency.

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Lee Mellish, District Manager

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Page 6

WSDOE states that they will view technology selection decisions in light of a 20-year payback time, and that they would expect no wholesale scrapping of new technology unless it was financially reasonable to change technologies. The meaning and intent of these views is vague with little assurance that if technology advanced rapidly, providing opportunities to significantly improve phosphorous reduction that large capital investments would continue to satisfy permit requirements.

Page 7

The plan discusses "Permittee's delta elimination Commitment." It is unclear what the commitment is. Liberty Lake Sewer and Water District has limited authority to regulate or control non-point sources and the reduction of those sources. It is unclear how the "commitment" will be determined and assigned to individual permittees. The Liberty Lake area has no known storm water discharges to the Spokane River. Other non-point sources of phosphorous to the river are not within the District's authority to regulate.

Page 8

The plan states that there is no certainty that the Phosphorous-loading goal will be met. It is unclear how it will be determined when enough has been done.

Page 9

2.1.1.1 - Six months is not sufficient time for pilot testing. It appears that the District may be allowed to utilize past and future pilot test results from other dischargers. Some review and analysis will be required to determine if these test results can be relied upon for design and provide the District a reasonable level of confidence that they are representative of expected results for the District's plant. A more reasonable period of time for pilot testing is 12 to 18 months.

2.1.1.2 - Six to twelve months is not sufficient time to prepare and obtain approval of a Facilities Plan. If the WSDOE would accept an amendment to the District's current plan that would focus on Phase II Improvements and Reclaimed/Reuse opportunities a one-year time period may be reasonable.

2.1.1.3.2 - Twelve months for design may or may not be reasonable. This will largely depend on the selected technological solution. If Reclamation and/or reuse are part of the solution, the design/agreements and possible land acquisition may take significantly longer.

Lee Mellish, District Manager

Page 3

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2 1 1 4.2.3

Twenty-four months for construction may not be sufficient for similar reasons stated for design

2 1 2 1 1 1

The first NPDES permit issued to the District should be for 2MGD as provided for in the approved facilities plan.

Page 10

2 1 2 1 1 5

Reasonable growth for the District is provided in the approved Facilities Plan and supports a 2MGD permitted treatment plant

2 1 2 2 1 1

Interim effluent limits for the District's first permit issued under the MIP should be the effluent quality parameters shown in the approved facilities plan for 2MGD with the treatment plant improvements currently under construction - Any other limits will potentially result in permit violations.

2 1 2 4 1 2 8.1

LLSWD is not responsible for complying with Phase II storm water permitting. The City of Liberty Lake is the agency that must meet these requirements. The City should be a party to the final agreement.

2 1 2 2 1 2

Adjustments to interim limits based on new technologies must consider funding and be cost effective.

2 1 2 4 1 2 8 3

LLSWD is not responsible for street sweeping. The District currently has a leaf pick up program that is very effective. The District is not responsible for road de-icers. They are also not responsible for but have been a watchdog of treating storm water within the portion of the District that is in the County. The City of Liberty Lake has assumed responsibility for storm water treatment within their corporate limits.

Pages 17 and 18

The Comprehensive Wastewater Resource (Reuse) Management Plan should be done concurrent with the Facilities Plan amendment to insure consistency. Identification of real potential users could delay completion of these planning documents.

4.1 4

The Comprehensive Water System Plan is currently being updated. Inclusion of reclaimed water and re-use in these updates could significantly delay completion of the plan.



Lee Mellish, District Manager
Page 4
February 15, 2006

We trust that these comments will assist you in your response to WSDOE.

Sincerely,

CENTURY WEST ENGINEERING CORPORATION

A handwritten signature in dark ink, appearing to read "Dennis D. Fuller". The signature is written in a cursive, flowing style.

Dennis D. Fuller, PE
Project Manager

YEAR 2006

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Liberty Lake Sewer & Water District

Permit #WA00045144 County: Spokane

Operators: John Yake, Dan Grogg, Mike Schmidt, Mike West
Certification Grade: III, III, I, I
Receiving Stream: Spokane River

Discharge Monitoring Report

MONTH

AUGUST

YEAR 2005

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1. CERTIFY UNDER PENALTY OF LAW, THAT THIS DOCUMENT AND ALL ATTACHMENTS WERE PREPARED IN ACCORDANCE WITH A SYSTEM DESIGNED TO ASSURE THAT QUALIFIED PERSONNEL PROPERLY OPERATED AND EVALUATED THE INFORMATION SUBMITTED. DATED

Department of Ecology
Water Quality Program
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